

Should Capital Flows Be Regulated?

A Look at the Issues and Policies

Roumeen Islam

What policies can emerging
markets use to improve risk
management in open,
liberalized markets?



Summary findings

Islam argues that externalities in financial markets, implicit and explicit guarantees on financial transactions, and information asymmetries in financial markets that may exacerbate contagion provide a rationale for a government role in managing the risk associated with cross-border capital flows. Governments can complement private sector risk management with measures that help deal with the volatility of capital flows. These measures include those that control the type and volume of capital flows and those that help investors make better investment decisions and that may reduce herding behavior, such as better information provision.

The main instruments that have been tried or recommended since the onset of the recent financial crises can be grouped in several categories.

Debt management

The composition, maturity structure, and level of external debt have played an important role in financial crises. High short-term debt relative to liquid assets has been found to be consistently correlated with financial crises in recent times. Governments can affect the level of debt (including private debt) and its composition, though the mix of policies they use will vary. Prudential regulation in the financial sector, corporate sector regulation, and restrictions on capital movements have all been used with varying success to change the level and composition of external debt.

Other macroeconomic policies

Most countries that have suffered macroeconomic crises have had fixed exchange rate systems; some have not. But whether or not a country has a fixed exchange rate is

not the relevant question. The question is instead whether there is reason to expect a significant weakening of the currency, possibly as a result of a change in policy stance. Large real exchange rate appreciations have been among the main reasons for runs on currency; macroeconomic policy needs to be aimed at managing these. With a fixed exchange rate regime, flexibility must be maintained elsewhere in the economy. Policymakers may need to make tradeoffs between price and output stability once market jitters have set in. There is no single right answer to the question of which to emphasize more at a given time; it depends on a country's circumstances.

Risk management in the financial sector

The health of the financial sector is related to the government's fiscal position, its macroeconomic policies, and financial crises. The regulatory and supervisory frameworks in developing countries need to be adapted to the special features of these markets. Many developing countries are subject to frequent trade and capital account shocks while lacking the means to deal with these shocks, such as adequate insurance markets. This situation may call for policies that not only affect the incentives of lenders but also help manage risk more directly. Examples of such policies include maturity and liquidity requirements.

Information and transparency

More disclosure of information and improvements in the quality of that information could reduce the volatility that arises from herding behavior. Ex ante, they may also have a beneficial effect on the allocation of capital.

This paper — a product of the Office of the Senior Vice President and Chief Economist, Development Economics — is part of a larger effort in the Bank to disseminate knowledge. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Roumeen Islam, room MC4-327, telephone 202-473-2628, fax 202-522-1158, email address islam@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. March 2000. (35 pages)

The Policy Research Working Paper Series disseminates the findings of work in progress to encourage the exchange of ideas about development issues. An objective of the series is to get the findings out quickly, even if the presentations are less than fully polished. The papers carry the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the view of the World Bank, its Executive Directors, or the countries they represent.

Should Capital Flows be Regulated?

A Look at the Issues and Policies¹

Roumeen Islam

¹ I am grateful to Amar Bhattacharya, Hafez Ghanem, Patrick Honohan, Jo Ritzen and Joseph Stiglitz for comments.

Introduction

Regulations permitting, capital can flow in and out of countries at great speed when expected rates of return change. Expected rates of return depend on many factors both exogenous and endogenous to the country and may not reflect actual returns as determined by the fundamentals within an economy. In a world of more open capital markets, improvements in technology in the financial sector and reductions in transactions costs, and an ever smaller proportion of cross border flows coming from official development assistance, volatile expectations will more swiftly be reflected in large and volatile movements in capital across borders. The changing international financial system in which large institutional investors hold very diversified portfolios has also meant that relatively small changes in relative returns can induce large (at least relative to the size of emerging markets) portfolio shifts. Combined with information asymmetries, low transactions costs have also increased the attractiveness of short term investments.

Volatility in cross border capital flows can have serious costs. Large capital movements have led to banking and currency crises and recessions in many countries. A rich literature has reviewed the causes of currency crises (Krugman, 1979, Flood and Garber, 1995, Calvo, 1993a,b, 1997, 1999 and Obstfeld, 1984). Currency crises are not a new phenomenon. But as financial markets have been liberalised, financial crises have become more frequent and have often been associated with banking crises (Reinhart and Kaminsky, 1997). Empirical work (Kaminsky and Reinhart, 1966) indicates that that an incipient banking crisis helps to predict the probability of a currency crisis.²

The recent crises highlight the externalities associated with private agents' economic decisions. With greater openness in capital markets and trade, a financial crisis in one country can have more spillover or contagion effects. Further, economic agents within the country who were not involved in borrowing and lending decisions have suffered unemployment and declines in their standard of living. The recessions induced by capital flow volatility can have severe and persistent effects on future growth. Volatility in capital flows can have further externalities: during the bust period there are differential effects on economic agents. For example, while the poor in rural areas who produce mostly for self consumption may be relatively better insulated from macroeconomic shocks (such as those in Thailand or Indonesia), the poor or lower middle

² Reinhart and Kaminsky find that the opposite result, namely that a currency crisis helps predict a banking crisis is much weaker.

income groups in urban areas are likely to be the most affected through employment cuts and price changes.

While it has generally been accepted that resources should be reallocated so as to maximize net returns, recent experience with “twin” (banking and currency) financial crises have led policymakers to reassess the potential net benefits from maintaining completely free capital movements across borders. Cross country evidence indicates that access to cross border capital flows may not always improve average growth prospects over the medium term. (Rodrik, 1997.) Financial liberalisation brings with it new risks. The issue is how to enjoy the benefits that greater access to capital brings while learning to manage the risks associated with financial liberalization. Public policy plays a key role in risk management because of the externalities that accompany private agents’ activities in financial markets and the existence of market distortions which may result in suboptimal allocations of financial resources. It is now widely accepted that government policies or lack thereof and have been at least partly responsible for the volatility in capital flows, and that this volatility has large and undesirable consequences for countries in terms of output losses and unemployment. Under such conditions, there is a case for government policies which either seek to reduce volatility or to limit the potentially adverse consequences of volatility. This paper reviews the macroeconomic and financial policies that governments have implemented in order to better manage country vulnerability to volatility in capital flows. The paper is based on a review of the existing literature and analysis of the recent financial crises. It starts with an introduction which provides a brief discussion of the reasons for the observed trends in cross border capital flows. The next section provides a discussion of policies to improve risk management. The short conclusion highlights important lessons.

Explaining Cross Border Capital Flows

Capital flows into countries for many reasons. There is an extensive literature which evaluates the empirical importance of “push” (exogenous) factors and “pull” factors in explaining capital inflows to different regions of the world. For example, Calvo, Leiderman and Reinhart, (1993, 1994a, 1994b), conclude that external factors are most important in explaining capital inflows to Latin America. Changes in interest rates in the United States have been among the most important exogenous (to the emerging market) factors leading investors to emerging economies in search of higher returns. Other exogenous factors include terms of trade shocks, and increases in international risk premia. Chuhan, Claessens and Mamingi (1993) find that domestic variables are equally important in explaining bond and equity flows to Latin America and more important in recent years in explaining such flows to Asia. Hernandez and Rudolf (1995) find

only domestic variables to be significant in explaining long term capital flows to a group of Asian and Latin American countries. A recent World Bank (1997) study and Montiel and Reinhart (1999) conclude that domestic policies and conditions have become more important in determining the direction and magnitude of private capital flows. Economic reforms (a pull factor) boost capital inflows. Reforms which are perceived to be only temporary may also attract capital inflows (Calvo, 1997). Investors would invest in the country temporarily in order to reap profits while exiting before the policy change. Such actions can be destabilizing for the recipient country: the case for implementing policies which can be sustained in a world of open capital flows, is strengthened. The recent crises have also highlighted the importance of elements other than the traditional economic reforms, which have had an impact either on the *magnitudes* of cross borders flows, their *pricing* or on their *direction*. These are state implicit and explicit guarantees, transparency and the disclosure of information, herding behaviour and contagion through financial market portfolio reshuffling.

Explicit and Implicit Guarantees

Perceptions of currency risk or the ability to protect the value of their investments, and of default risk are important factors that affect investors' decisions to withdraw from assets denominated in certain currencies. Governments and international lenders of last resort (ILLR), through a host of explicit and implicit guarantees affect both by helping to contain the risks of investing in emerging economies. International and domestic policies affect the credibility and perceived willingness of governments (of both creditor and borrower countries) to protect the foreign currency value of investors' portfolio, maintain open capital accounts, maintain the stability of the domestic financial system and prevent default, and to maintain equity market values, among other things. Therefore, investors care about the host government's ability to maintain its guarantees or its *net worth* (Dooley, 1996, and Krugman (1998))³, as well as the creditworthiness of the individual borrower. Lender country governments can also step in as ILLR in order to reduce the risk of international systemic crises or for other economic or political goals. If for example, the United States government is expected to act as ILLR to an emerging economy (such as Mexico), the risk associated with Mexican debt is significantly reduced and the pricing and direction of capital flows will probably be affected. This means that creditors may charge Mexico rates lower than they otherwise would have. However, the risk premium will start to rise when expectations of a bailout are reduced. This may happen if the magnitude of the

³ Devaluations affect the net worth of government. A highly indebted government which has borrowed in foreign exchange but a large part of whose assets are denominated in domestic currency may see reductions in net worth after a devaluation. Expectations of devaluation which raise interest rates for government also affect net worth.

needed funds is large (and therefore the costs of bailout are large). The failure of the IFIs to bail out Russia in August 1998 and the recent attempts to bail in private creditors in Ukraine, Pakistan and Romania led to risk premiums increasing for many other emerging markets.

Creditors can be expected to over-lend to risky borrowers in the presence of explicit/implicit guarantees (moral hazard). Capital will flow into countries at rates which do not reflect the true (unguaranteed) cost of capital and therefore equilibrium borrowing at any time will be higher than would be the case under a situation without the guarantee. Lenders in creditor countries will take on more risky projects while borrowing financial institutions (protected by their own guarantees) will take on riskier projects. But, accumulation of (host country) government liabilities (explicit/implicit or contingent) at a rate faster than its accumulation of assets will reduce net worth and reduce the value of guarantees.⁴

Exogenous shocks (push factors) affect net worth and thereby both the *ability* and *willingness* of governments to honour their guarantees. For example, for the Latin American countries, in the late 1980s and early 1990s declines in world interest rates had two effects: investors looked for higher returns outside the developed world and declines in real interest rates had the effect of reducing the value of existing debt and increasing net worth of governments (Dooley, 1996). In such a context, close links between banking and currency crises are not surprising. As contingent liabilities accumulate, at some point, investors should reassess downwards the net worth of government and the willingness of governments to maintain guarantees.⁵ Some (Burnside, Eichenbaum, and Rebelo, 1998) argue for example, that the currency runs in Thailand and Korea occur after the information about high future deficits arrives (due to weak banking sectors) but before the implementation of the new monetary policy. They also argue that under fixed exchange rates and implicit guarantees, it can be optimal for firms to minimise hedging of foreign exchange risks (Burnside, Eichenbaum, Rebelo, 1999). These theoretical and empirical analyses have highlighted the interdependence of macroeconomic and financial sector policies and outcomes.

⁴ It is also true that under imperfect information, if investors have more knowledge of the government debt but less of its assets or the value of its assets, then there may unwarranted change in the perceptions of government net worth.

⁵ Small changes in the value of net worth may not have any effects or significant effects on investor perceptions since investors may only change expectations if net worth changes are large enough or alternatively there may be a minimum threshold.

Transparency and Provision of Information

It is well known that in the presence of externalities there will be an under-supply of information by markets. Some contend that lack of transparency and poor disclosure requirements may affect not only the direction and volatility of capital flows but also their pricing. For example, it is believed that investors fled *en masse* from the East Asia region over an extended period because they could not distinguish good borrowers from bad. Conversely others contend that lenders may have “over lent” because the financial situation of firms and financial institutions were believed to be better than they actually were. Maintaining transparency in financial transactions has become increasingly important as financial markets have changed. The increasing use of securities instruments and equity markets rather than bank lending, growing international integration and the changing boundaries between institutions has meant a greater reliance on market prices in the allocation of risks, putting more emphasis on the public disclosure of information rather than on bank-client relationships (Stiglitz and Bhattacharya, 1999). But there are also situations in which the provision of better information could lead to more volatility in the sense that a finer division of markets and prices are made available. However, it may be argued that there are unlikely to be “surprises” in these situations so the overall magnitude of changes in expectations might be smaller. In most emerging economies, information tends to be scarce and these economies are more likely to be characterized as those in which greater information could smooth volatility. It may also be argued that implicit/ explicit guarantees are more important for countries where information is scarce.

Hedging and Contagion through Portfolio Reshuffling

Emerging market economies suffer shocks related to herding behaviour by market participants. Investors seem to withdraw from financial markets in herds.⁶ Such behaviour may be rational on the part of the individual investor (for example, when there are information asymmetries, Calvo, 1997) but may be completely unrelated to fundamentals within a country.⁷ Countries may also suffer shocks through trade or financial links with crisis countries. Even without such links, emerging market access to bank finance may be highly volatile because of the way in which portfolio managers manage risks. The simple act of reshuffling portfolios in order

⁶ Bannerjee, A. (1992), Kaminsky and Schmuckler (1999), Kaminsky and Reinhart (1999), Holger Wolf (1999), for example.

⁷ For example if there are costs to obtaining information and if one investor is viewed as having superior information on a country's economic prospects then his exit will be followed by others. Further, a crisis in one country which may lead investors to revise expectations about another country which is viewed as having similar fundamentals.

to contain overall risk in response to a change in one country can have dramatic consequences in another country.

What Might Be Said About Different Policy Options

Empirical analysis of financial crises have highlighted some factors shared by countries which have experienced capital flow reversals and financial crises: fast growth and liberalisation of financial markets, perverse incentives and inability to manage risks in the corporate and financial sectors, large current account deficits and “overvalued” or continuously appreciating exchange rates, high levels of debt, particularly short term external and domestic debt (especially compared to levels of liquid assets), and sometimes, poor fiscal policy. Fast growth of financial sectors, and specifically growth in banking sector credit has led to deteriorating portfolios in financial institutions due to the inability of banks’ risk management systems and the supervisory and regulatory framework to keep pace with financial system development. Poor performance in the financial sector and the rapid buildup of contingent liabilities have led to reduced investor confidence in the economy. Large current account deficits have meant a buildup of external debt and along with appreciating real exchange rates, have signaled declining competitiveness in export markets. High levels of short term debt and mismatches in asset/liability denominations, and fiscal deficits have led to fears of default and/or devaluation.

There are a wide variety of policies which have been applied in countries with the aim of (a) limiting the growth of their domestic financial sectors, (b) restricting capital flows in order to limit volumes as well as composition (c) improving risk management within banks and firms in emerging economies and enabling easier supervision of financial institutions by the (limited capacity) of the authorities, (d) avoiding real effects on the domestic economy such as inflation, (e) limiting implicit guarantees and therefore moral hazard. The following sections review the different policies that countries have used or may wish to implement in order to reduce the vulnerability of their economies to volatility in capital flows. There is no policy or no menu of policies which can prevent financial crises if a country is hit by a large enough shock. But there is a growing awareness that the process of development and financial liberalisation changes the characteristics of risks that economies are exposed to. Governments bear responsibility for helping economic agents manage risks better and particularly, for implementing actions which take into account the externalities associated with their actions.

There are four principal categories of policies that policymakers can implement in order to reduce vulnerability to volatility in capital flows: (a) those that impose restrictions on inflows or outflows of capital, (b) fiscal policies, (c) monetary and exchange rate policies, (d) financial

sector and (e) corporate sector policies. Many of these policies are designed to counteract the effects of (broadly speaking), government insurance which creates moral hazard, information asymmetries and market failures. This paper will concentrate on policies designed to reduce the incidence or severity of a potential crises, not those which may be taken in response to crises (though in some cases there may be an overlap)⁸.

Policies that Affect Inflows and Outflows of Capital

Many countries impose some restrictions on cross border capital flows. For some countries these are used with the intention of blocking capital outflows, or simply to increase monetary autonomy under fixed exchange rates. Others use them to prevent overheating of the economy or to change the maturity profile of their external debt. In this paper I assume that the objective of governments is to manage risk of large output fluctuations in a volatile world. Any controls on capital would be aimed at smoothing short run fluctuations in output resulting from large fluctuations in the availability of financial capital. In this scenario, the relevant issue is not whether capital controls are effective in preventing cross border flows of capital or in giving monetary autonomy over the long term but rather, whether they might be effective as stabilizers. The various types of capital account activities that may be restricted will not be covered here⁹ but only those which have been widely debated in recent times as having possible stabilizing effects.

It is generally accepted that controls on *inflows* may change the composition of capital flows, but that over the longer term they have little effect on the volume of capital since over time evasion increases.¹⁰ Changing the composition of flows is in itself a desirable outcome (see Box 1). Moreover, if capital controls have even temporary effects on total flows (in other words they temporarily slow down inflows in good times, and outflows in bad times) then they will have acted as smoothing mechanisms, a desirable outcome.¹¹

⁸ For example, provision of better information on corporate and banking accounts will help investors assess the true risks and perhaps reduce herding behaviour and it will also allow creditors to distinguish between good and bad credits in crisis periods.

⁹ See IMF: Exchange Arrangements and Exchange Restrictions Annual Report 1998.

¹⁰ For example, Montiel and Reinhart, 1999.

¹¹ A recent paper on Chile (Schmidt-Hebbel and Hernandez, 1999) found that capital controls in Chile affected the overall level of capital inflows and interest rates.

Box 1: Types of Capital Inflows: are some better than others?

Both the empirical and theoretical literature has focused attention on the nature of capital flows and the maturity structure in determining crises. The hypothesis has been that short term debt increases volatility as do portfolio flows compared with longer term debt and FDI. Some have contended that distinguishing between capital flows based on maturity will not shelter developing countries from volatility in flows since empirically it is hard to distinguish between short and long term flows and between FDI and portfolios flows (Claessens, Dooley and Warner, 1995). Further, the development of derivatives markets (for example, FDI can take on properties of more volatile debt since investors may short the currency in order to hedge their losses) and special loans with bullet repayment clauses, makes this distinction rather useless from policy purposes (Garber, 1996). However, the evidence from the recent crises and the theoretical literature (Rodrik and Velasco, 1999) indicate a significant role for short term external debt in increasing country risk and indicate that in fact, some flows are more risky than others.¹² Moreover, they show that countries with large amounts of short term debt can have serious output losses in a crisis since the magnitude of transfers involved in a given period is large.

A key issue is when such a tax should be introduced and whether such taxes should vary with the situation persisting in global financial markets. For example, should countries remove reserve requirements on inflows when global financial conditions tighten, as Chile and Colombia have done? Doing so may encourage short term inflows but the removal of restrictions may help reduce rates at which domestic agents can borrow at a time when interest rates are high or rising. If the restrictions are removed in response to what is perceived as a temporary change in market conditions in order to reduce the real effects on the economy, and other complementary safeguards (for example, strong supervision of the financial sector is in place) such a policy may be advisable. However, the risks remain that the temporariness of the market change is unknown, and if the conditions persist, the country may accumulate large amounts of short term debt. A related question is at what point should countries without these controls impose them? Probably not during tight liquidity conditions as this might (a) send the wrong signal to investors and (b) further reduce the supply of funds to the country. Policymakers need to weigh the options and take complementary measures (see below) to reduce country exposure. As the experience of countries has shown, capital flows need not be very large in absolute terms or relative to GDP, in order to be poorly allocated, or to create risk of crisis in countries.

¹² It is revealing that the total stock of external short term debt is found to be significant in predicting crises: its significance illustrates the externality associated with any individual borrowing abroad.

There are many versions of a tax on inflows: from a mild Tobin tax on all international financial transactions, to those which tax only short term borrowings and those which entail a reserve requirement on all (non-equity) or certain types of inflows. Country experience has shown that small taxes do little to affect the direction and magnitude of capital flows. Also, taxes and reserve requirements need to be broadly defined in order to work; those which affect only short term flows can be evaded by a simple matter of relabelling short term flows. This has been demonstrated by the experiences of Chile and Columbia (see Box 2).

Box 2: The Experiences of Chile and Colombia

Chile first imposed a 20% nonremunerated reserve requirement whose holding period was differentiated by the maturity of the loan. For example it had to be held for 90 days for 90 day credits but for one year for credits of maturity greater than one year in the currency in which the debt was denominated. Several changes were made in order to close loopholes. For example, the reserve requirement was later increased to 30%, and was extended to renewed borrowing, and to foreign currency deposits held in domestic banks, the maturity requirement was changed (there was a one year holding period for all debt) because of the difficulty of distinguishing between different maturities, the deposit was required to be made in dollars only,¹³ and secondary market transactions in ADRs became subject to the requirement.¹⁴ Most recently the reserve requirement has been abolished in the face of tightened liquidity conditions.¹⁵ FDI was exempt from the controls in Chile.¹⁶ Most analysts have concluded that the Chilean policy was successful in changing the composition of capital inflows to longer maturity inflows. A recent paper (Hernandez, Schmidt-Hebbel, 1999) finds that these controls also lowered the total volume of inflows and had persistent effects on the interest rate.¹⁷ Columbia had a withholding requirement on foreign borrowing (non-remunerated cash reserves) declining with the maturity of the loan (93% for loans under 12 months, 64% for 18 months, 50% for 24 months). At a later date, it was changed so that the requirement was 140% for loans under 1 month, and 42.8% for those between 59-60 months. These restrictions were found to have changed the composition of inflows in favor of more long term inflows. The extreme form of controls on inflows is not allowing any external borrowing. Some countries have allowed only "authorized" institutions to borrow abroad. This way external borrowing could be restricted to "safe" institutions.¹⁸

¹³ In order to prevent the buildup of open positions in domestic currency.

¹⁴ "Later financial" FDI was no longer exempt.

¹⁵ The Chileans believe such a relaxation of the regulations is rational in that the point of the regulations was to smooth capital flows.

¹⁶ However, FDI can also have destabilizing effects. If foreign investors are locked in they may hedge their risks by shorting the domestic currency and may therefore contribute to volatility in flows.

¹⁷ The Chilean authorities believed this too and that is why as inflow volumes have fallen, they have removed the controls.

¹⁸ However, these institutions could still onlend to "risky" financial institutions or corporations.

Another suggestion that has recently been espoused¹⁹ is that countries should return to closed end mutual funds as the preferred alternative for foreign investment in domestic equities. The advantage of these funds is that wholesale dumping of individual companies might be limited or at least slowed down considerably. These funds used to be the preferred mechanism for investment in emerging markets.

Controls on capital *outflows* exist in many countries and more recently have been an issue for discussion in countries which had previously liberalized their capital accounts. In such countries which face a potentially large outflow, such controls may be used to slow down outflows, or may enable the authorities to have some control over monetary policy in order to limit the output effects of short run changes in capital flows. Like controls on inflows, those on outflows are subject to leakages which may increase over time. However, studies have shown that they are effective in the short run in reducing the rate of outflow as well as in maintaining an interest rate differential for the host country.

Malaysia stands out as a striking example of a country which imposed controls on outflows.²⁰ The authorities implemented these measures in September 1998. These comprised limits on investments abroad (prior approval being required), control of offshore markets in the ringgit (residents were previously allowed to borrow ringgit from nonresident banks), the Malaysian currency (offshore banks had previously been allowed to lend in ringgit; proceeds of these loans were being used to fund purchases of Malaysian assets for “speculative” purposes), and all ringgit earnings had to be held in the domestic currency for a year until conversion was allowed. There was concern in many circles that these actions would lead to a dramatic decline in investor confidence. Others felt that such a move enabled Malaysia to partially insulate the economy from excessive short run volatility, whose negative consequences for growth would have entailed a greater loss in investor confidence. Given the tightening in international capital markets that has persisted since this time, it is hard to attribute any change in access for Malaysia to the implementation of capital controls. By February 1999, Malaysia had modified its quantitative controls on capital to a price based system by adopting exit taxes. For the stock of capital which had been locked into the country in September 1998, a tax rate of 30% on the principal will be levied if repatriated before end-March 1999, 20% before end-May and 10% before end-August. For new portfolio inflows (after February 15) foreign portfolio investors will incur a 30% tax for repatriation before 12 months and 10% after 12 months.

¹⁹ John Williamson (1999).

As a result of these measures, Malaysia has been able to pursue a more independent (and expansionary) monetary policy and maintain an interest rate differential (at least in the short run) at a time when its banking sector has been hard hit by tightened liquidity conditions in global markets. It has earned itself some breathing space during which time it can implement reforms in the financial and corporate sectors. These reforms will be key to future stability and regained access to capital flows. The data available at the time of writing (data are only available with a lag of 3-4 months) indicate that central bank reserves have increased substantially since the implementation of capital controls and that FDI flows have not declined.²¹ In terms of recovery in output, Malaysia's downturn began months later than those in Korea or Thailand and it already seems to be on the way to having positive growth in 1999. In May 1999 (8 months after the imposition of capital controls), Malaysia plans to sell as much as US\$2 billion in bonds to international money managers.

Fiscal Policy

Fiscal policy has played an important role in either enhancing country vulnerability to financial crises or, the opposite, in enhancing stability. Large fiscal deficits, leading to large current account deficits and real exchange rate appreciation, or financed by high levels of short term debt are well known elements which affect a country's risk profile. But tight fiscal policy at times of overheating in the economy, and good debt management has played an important role in other countries. The interaction between fiscal and monetary policies has been widely discussed in terms of exchange rate management. What has gained more attention in recent times are the strong interactions between capital flows and fiscal outcomes. Large capital inflows to countries have been associated with periods of high growth (compared to the recessions induced by outflows) and therefore buoyant tax revenues. Most countries have spent these "additional" revenues. Emerging markets' fiscal policies tend to be procyclical.²²

Countries are increasingly recognising the value of using high revenues from good times to set up the Treasury's own reserves (invested in foreign assets) in bad times. Estonia has recently established a Stabilization Reserve Fund which has aimed to do just that. The opportunities

²⁰ Evidence from countries such as Chile in the 1990s, Spain in 1996, FRY in 1990 indicate that liberalizing outflows may result in greater inflows (by increasing investor confidence).

²¹ Balance of payments data for Malaysia are only available with a lag so a detailed account of developments in external accounts is not available. Unaudited reserves have increased from US\$21.4 billion at end Sept. 1998 to US\$28.6 billion at end March 1999. There was a large trade surplus (US\$ 6 billion) during Oct 1998-Jan, 1999.

²² See Easterly, Islam, and Stiglitz (1999).

foregone from “saving” a portion of tax revenues (which will allow greater flexibility in bad time) must be measured against the potential gains from stabilizing. Argentina, another country with a currency board and therefore very few options in terms of alternative financing when times are bad, also has such an arrangement. The argument for such a fund is strengthened by evidence that the tax *base* tends to be procyclical in developing countries so that there is a larger surplus in good times and a larger deficit in bad times. (Talvi and Vegh, 1999). But countries need to factor in the costs of holding high liquid reserves as they strive to achieve benefits from large capital inflows.

Government policy towards the placement of its deposits can be an additional instrument which may affect the stability of banking. In Estonia, for example, where government deposits in the banking system are important (30% of deposits), movement in and out of banks can affect individual banks’ liquidity since these deposits are treated like any other deposits. Moreover, if governments run overdrafts (forced lending by banks) due to unexpected tax revenue shortages, or unexpected expenditures in bad times, this can create pressure for banks and enhance liquidity constraints in bad times.

Many countries have exercised fiscal restraint as a key response to dealing with excessive capital inflows. This was the case in Thailand in 1988-91, and Chile since the mid 1990s where taxes were raised and expenditures moderated. Good fiscal fundamentals and fiscal management were very important for Chile in dealing with an open capital account. Malaysia limited public consumption and downsized the public sector during the years of plenty.

Public debt management has turned out to be of critical importance. The recent crises have shown that the build-up of short term domestic debt by government (as well as by the private sector) is an important factor affecting the ability of governments to maintain the status quo (even if the total stock of debt may be relatively small). High levels of short term debt, high interest payments and poorly developed expenditure and taxation policy leads to expectations that the government will (a) default on domestic debt obligations (which may be held by foreigners or by banks funded with foreign borrowing) with consequences for banks and future access to financing (which in turn will have implications for macroeconomic policy) or will (b) monetise the deficit (which could undermine the exchange rate regime). Good fiscal management is key to avoiding the build-up of short term debt, domestic or external, at high interest rates and once having accumulated short term debt, key to getting out of the debt trap.

Though country net worth is almost impossible to quantify and borrower solvency may be hard to verify, reductions in net worth (which may be easier to establish, by looking at debt

accumulation versus asset accumulation) signal the direction of changes and also signal the willingness of governments to service debt since the relative costs of servicing debt increase as net worth declines. When interest rates on government paper are high, it is attractive to buy Treasury bills. But high interest rates reflect the risk of devaluation and default and reduce net worth. The dynamic process is such that interest rates which are too high may lead to default. At some point, interest rates become so high (and the effects on government net worth so negative) that the short run gains from buying foreign assets are offset by the risk of default. While large amounts of deficit financing through short term external borrowing can be a risky endeavor, it is still important to develop a domestic Treasury bill market since this will help in the conduct of monetary policies and also provide a liquid asset for the financial sector. Countries such as Turkey, Russia and Ukraine are at one extreme: they have shown an excessive reliance on short term Treasury bills much of it financed by external funds. Estonia on the other hand, is constrained by the lack of a market in Treasury bills.

The fiscal authorities can also help reduce vulnerability not only by maintaining high liquidity but also by diversifying the currency in which external debt is denominated through active debt management. Argentina follows such a strategy. External debt management however, consists of more than managing the maturity structure of debt, the interest rate and the currency denomination. Debt management includes avoiding clauses- such as bullet repayment clauses on external debt which are effective at the discretion of the lender- which are unfavorable for the country and allows lenders to demand repayment (through a put option) when certain conditions (unfavourable to the borrower) prevail. Good debt management includes efforts to reduce risk by having large sources of liquid funds available, or the use of floating interest rates on debt (in order to reduce the attractiveness of short term debt paying very high interest rates).

Lastly, tax policies can be important destabilisers. For example, in Turkey, Treasury bills benefit from preferential tax rates. In Thailand banks borrowing and lending exclusively in foreign currency have received tax breaks (Bangkok International Banking Facility).

The old lesson that the package of fiscal, monetary and exchange rate targets need to be consistent holds even more strongly in the presence of open capital accounts since governments can be punished much faster and with greater severity in such a world. And governments must maintain a strong liquidity position. Liquidity is particularly important for emerging economies because central banks are constrained in their ability to act as lender of last resort: people do not just run from banks, they run from the currency. Argentina, through its liquidity requirements on banks and its contingent credit facility is aiming precisely to increase liquidity in case of bank-currency runs.

Exchange Rate, and Monetary Policies

Currency runs and crises can occur no matter what the exchange rate regime. Following the East Asian crises, fixed exchange rates and subsequent large (and too late) devaluations were blamed. These exchange rate regimes were viewed to be an important element attracting capital inflows to many countries (by allowing capital to be provided at lower risk and therefore lower prices so that quantities demanded are commensurately higher). As a consequence, many countries have attempted to lower capital inflows by changing their exchange rate policy. It has however, been argued that markets/ investors are irrational in not buying insurance under fixed exchange rates (Stiglitz, 1999). The role of insurance markets is to provide insurance for precisely these sorts of outcomes: the small probability of a large negative outcome. The absence of such insurance markets may be viewed as a market failure.²³ Recently, others have argued that in the presence of implicit guarantees and fixed exchange rates it may be optimal for firms to not hedge all their foreign exchange risks (Burnside, Eichenbaum and Rebelo, 1999). Another argument says that the focus on the so called stability of exchange rates is misguided: countries with fixed exchange rates generally have their currencies fixed against one major currency while the risk against other currencies fluctuates along with the value of the currency to which it is pegged. Most of the emerging markets that have suffered crises have had fixed exchange rates (but this may be because a large number of emerging markets have such an exchange rate regime). Yet currency crises can also occur under flexible rates as the two crises in Turkey (1991 and 1994) demonstrate (see Box 3). However, it may be that by increasing short term foreign exchange risks under flexible exchange rates in markets where perfect markets (for hedging) may not exist, the supply of capital will shift upwards and demand downwards, so that lower levels of lending and borrowing are realized. If this is so, then the magnitude of the crisis when it hits, could be smaller in floating rate regimes.

Countries such as Argentina have fared relatively well on their currency boards. Argentina suffered from the Tequila effect in the wake of the Mexican crisis and in response strengthened its financial and monetary management. But the recent developments in Brazil and in international financial markets has created recessionary pressures. Under its currency board, Estonia in Eastern Europe, has managed its economy well till now. The key to this has been the development of a flexible economy which Estonia must maintain in view of the rigidity in relative prices imposed by the currency board. Estonia has not been exempt from expectations

²³ Some believe that the close nexus between corporations and government in East Asia led to such failures (explaining the lack of demand for such services and therefore the lack of such markets developing).

that it might adjust its peg, but it has survived with some international help. Other countries (such as Chile) have chosen exchange rate bands of various types.

A key issue is whether countries that are on the verge of financial crises (for example those that have been affected by some degree of contagion) should introduce flexibility in their currencies, or more generally, when is the correct time to float (managed or otherwise) or introduce some exchange rate flexibility? The experience of Mexico, Brazil and the East Asian economies suggest that the correct time to devalue may not be when the economy is already being hit by investor skittishness. In fact, there seems to be no correct time for *large* devaluations. The probability of recovering from large overvaluations smoothly seems to be small.²⁴ Therefore, the argument for avoiding large real appreciations and keeping devaluations small, even if frequent, or for having an adjustable exchange rate band is persuasive.

Should a country float its currency completely or raise interest rates to defend it when hit by contagion? Neither policy will be a panacea and its effects will depend on private sector expectations regarding economic recovery. Rising interest rates can have enormous consequences for the corporate sector and the banking sector, particularly if the banking sector is weak and the corporate sector is highly indebted as East Asia has shown. And high interest rates may not serve to defend the currency.²⁵ Subsequent large devaluations (which have invariably followed) will make these effects worse. If a country foregoes high interest rates, then the alternative may be an immediate devaluation. Depending on the structure of indebtedness of the economy, the level of reserves, and the characteristics of indebted firms, devaluations may have less negative effects on firm performance and output. In countries where corporations with high levels of domestic debt and banks are relatively well hedged against foreign currency risks, a devaluation before undergoing a period of high interest rates (which would have lowered firm net worth economy-wide and worsened banks' portfolios) may have fewer negative effects than high interest rates. In most *developed* nations, shocks to the financial sector which pose systemic risk have been dealt with by providing liquidity to financial institutions and thereby maintaining production and financial intermediation. By reducing the real effects on the economy, policymakers may be able to help reverse capital outflows or shorten the period of outflows.

Exchange rate/ interest rate policies can have different distributional impacts which governments will also need to consider. An increase in interest rates aimed at defending the

²⁴ Goldfahn and Valdes (1998) show that the probability of recovering smoothly from large overvaluations (over 25%) is only about 4%.

²⁵ Kraay (1998).

currency may have disproportionate effects on medium scale enterprises: very small firms may not have relations with the banking sector and the top few firms will more likely be able to maintain international sources of funding or maintain access to credit from domestic institutions at preferred rates. But an exchange rate devaluation may also increase the prices of goods (such as imported food) that the poor consume. The urban poor may be more likely to suffer.

Sterilization

Many countries such as Mexico, Chile and Korea have tried to sterilize capital inflows in order to dampen the effects on their economy. Sterilization may entail substantial (quasi-fiscal) costs for governments. The empirical evidence indicates that sterilization has led to accumulation of reserves but that despite sterilization, exchange rates still tended to appreciate, short term paper became more attractive as short term interest rates rose, and that higher interest rates have dampened investment demand (Reinhart and Reinhart, 1997). More recent evidence from fifteen emerging economies around the world indicates that increased sterilisation results in an increase in the aggregate volume of capital flows and also a shift in the relative importance of short term capital to FDI (Montiel and Reinhart, 1999)

Dollarisation

In many emerging economies, the implementation of monetary and exchange rate policy is complicated by the dollarisation of the economy. Residents are permitted to hold foreign exchange deposits, and many transactions are conducted in foreign currency. While allowing dollar denominated deposits can improve financial intermediation, the use of dollars in an economy alongside the domestic currency also introduces complexities in monetary management. Demand for the domestic currency is likely to be much more volatile (and related to transactions and income in a much more complicated manner) and it may be difficult to know what monetary aggregates are relevant in determining inflation.²⁶ Further, foreign exchange risks for banks increase substantially. Financial sector regulation needs to recognize the greater risks.

Financial Sector Policies

Vast financial reallocations in the recent crises have highlighted the weakness of regulatory policies in both developed countries and emerging markets. This section focuses on what emerging markets may do to ensure risk bearing commensurate with risk management ability in

²⁶ The two currencies serve essentially the same purpose so the public may shift between them for reasons which are not easily identifiable. In Peru for example, it was found that broad money aggregates were the relevant aggregate in predicting inflation.

their financial sectors. Some general observations can be made: First, financial sector distress can quickly be transformed into a currency crisis. Second, high financial sector profits do not necessarily indicate a healthy, stable or buoyant financial sector.²⁷ Third, financial institutions are both a source of risk to, and are affected by risks from the rest of the economy. Fourth, overly restrictive financial sector policies, or the wrong kind of restrictions, when imposed on the financial sector will prevent it from doing its job of reallocating risks and intermediating funds well.

When the recent currency crises erupted, it was argued that restrictions on the activities of banks were necessary since these are the entities which benefit from the majority of implicit government guarantees through deposit insurance (explicit or implicit). Most countries have found that by targeting banking activities or only balance sheet activities of banks, risk taking activities are moved either off balance sheet, to subsidiaries, or to nonbank institutions including corporations, (and credit risk replaces currency risk). Even nonbank corporations can pose systemic risks and/or become too large to fail (for example, in response to export shocks). In many smaller countries activities of these large corporations may also be viewed as guaranteed (and thus subject to moral hazard problems) in the sense that governments will take actions to protect them. As another example, if domestic banks are prevented from borrowing offshore, firms could borrow offshore and deposit these funds with banks which, with borrowing restricted, might offer good interest rates. Banks would onlend these funds to other customers. If the corporations hedged their exposure by making foreign currency deposits in banks then banks would end up with the same short term exposure as when there were no restrictions. In the end banks would bear the risk, and foreigners would continue to lend at favorable rates because banks are guaranteed. (Eichengreen, 1999). These problems suggest that there is no single clean instrument which will help manage risk for countries but rather a package of instruments needs to be found for each country.

This being said, in most emerging markets, banks are the most important players in the financial system and by virtue of their dominance as well as their particular characteristics, banks have also been the most important players in the recent financial crisis. Therefore, this section will focus mostly on banks. For the purposes of this paper the various policies may be grouped under two themes: (a) moderating the pace and growth of the financial sector and controlling the level and composition of capital flows; (b) improving risk management (c) supervision and

²⁷ In fact, work done for the EBRD's transition report indicates that in many Eastern European countries high bank profitability has been associated with market power rather than efficiency gains. There have also been instances of gambling behaviour.

regulation during economic downturns or potential downturns. There are many other policies which might be implemented to strengthen emerging market financial sectors but these will not be covered here.²⁸

Restrictions on credit growth, and composition of flows

Recent experience suggests that credit growth should closely follow output growth in economies with mature financial markets. In developing economies with a low degree of financial depth, it can safely be between 1.5 and 2 times output growth but at higher rates it has been found to be difficult to maintain the quality of banks' portfolios (Claessens, 1998). Credit growth can be limited by imposing high marginal reserve requirements on deposits. In Chile for example, demand deposits are subject to a 9% reserve requirement but there is a marginal reserve requirement of maintaining 100% in central bank paper for all deposits that exceed 2.5 times capital and reserves.²⁹

Maturity requirements (limiting maturity mismatches between assets and liabilities) may be imposed on all financial institutions where, due to market or institutional failures, good risk management will not be sufficient. Regulatory authorities may limit the leverage of those to whom banks lend. Korea has now imposed such a constraint. The experience of Malaysia shows that tight regulation of banks—requiring them to look at the foreign currency exposure of firms to which they lend can put a damper on foreign borrowing.³⁰

Managing Risk

Capital Adequacy and Incentives³¹

Requiring banks to have high capital adequacy is one of the most obvious ways to affect incentives since having own capital at risk tends to reduce risky behaviour. It has been argued that countries subject to volatility (emerging economies) should adopt higher capital adequacy standards in order to provide a buffer for banks which would reduce vulnerability. There are many drawbacks to relying primarily on this instrument. First it is difficult to measure capital and to measure the quality of capital particularly in emerging markets where the quality of information is poor. Second, this requirement may not always work. The experience of Malaysia

²⁸ See Stiglitz (1999) for a full discussion.

²⁹ In many countries reserve requirements were abolished as implementation of monetary policy became more sophisticated.

³⁰ Malaysia's downturn has hit mostly the inflated property sector and the construction sector.

³¹ This topic is not covered here in detail but only in relation to its effectiveness in guarding banks against excessive volatility.

in this regard is illuminating. Malaysia has had a two tiered financial system since 1994. Banks in tier one had double the capital requirements of those in the second tier and these banks in turn were allowed to offer a much wider range of products. The large minimum paid in capital requirements led to several shareholders of tier one banking institutions borrowing short term in order to enhance their capital base. These banks then had to lend aggressively in order to generate sufficiently high returns to service their debt obligations. The central bank of Malaysia has since announced that increases in bank capital by bank holding companies and other controlling shareholders should be funded by non-debt sources. It has been argued (Fernandez and Guidotti, 1996) that where bank asset quality (and therefore bank capital) cannot be measured well, reserve requirements may be a substitute for capital requirements.³²

A general lesson that also emerges is that there is a need to differentiate between systemic distress in the financial sector and isolated distress. Isolated distress does not generally lead to currency crises, only systemic ones. The key objective of financial and macro policy should be to limit negative effects on output and employment since this will generally be the most effective way to regain access to international markets. In this regard, excessively stringent application of capital adequacy requirements during downturns or periods of systemic distress may work counter to the objective of maintaining output stability.

Imposing liquidity requirements for banks will reduce chances of a liquidity crisis. They can be implemented in a variety of ways. For example a certain percentage of assets (based on either total liabilities or short term liabilities) may be required to be held in liquid form. Some countries allow these assets to be held in assets with low credit or market risk (such as United States Treasury bills). The banks' holdings of liquid assets were crucial in enabling the Argentine banking system to survive a 20% deposit outflow in the Tequila crisis of 1994-95 without abandoning the currency board. Now liquidity ratios in Argentina amount to around 30% of deposits (some held offshore) and have helped banks survive through the unfavorable market conditions of 1997-1999. Many countries allow foreign exchange deposits in their banks. These deposits can increase foreign currency (and liquidity) risk for banks; there is an argument for

³² In other words, reserve requirements maintain a prudential role in addition to being a monetary policy instrument. They show that banks' marginal cost of funds raised with deposits when reserve requirements are low, is lower than the marginal cost of capital. Therefore, the desired capital adequacy ratio by banks is lower. For high reserve requirements, desired capital asset ratios are higher. Where there are strong informational asymmetries, and less than ideal accounting standards, banks may report capital asset ratios which may not reflect its true state. The use of the reserve requirement can then enforce the capital adequacy ratio that the authorities want. The authors also show that in such a system (*ceteris paribus*) the equilibrium will be associated with a lower volume of credit and higher interest rates.

imposing reserve requirements on these deposits as well. High liquidity ratios however raise banking costs.

Government treasury bills in countries where the fiscal and overall macroeconomic situation is not sustainable, or is frequently subject to shocks (emerging economies) such as those in Turkey and Ukraine should be considered “risky” assets and their acquisition monitored. If, as has frequently been suggested, these countries just implement the Basle standards they will use 0% risk weights for government bills/bonds and they will underprovision for the substantial risks in their portfolio arising from their holdings of government paper.

The role of foreign banks has been subject to some discussion. Some believe that the entry of foreign banks can increase the efficiency of the banking sector and increase access to foreign funds. Estonia has looked to the entry of foreign banks to help stabilize its banking sector. Argentina, another country with a currency board has looked to foreign entry and has significantly restructured its banking sector (since the Tequila crisis). Foreign banks may be able to mitigate the effects of a credit crunch. This will only work if they can distinguish good credit from bad. But country experience suggests that even foreign banks may provide funds procyclically. Further, financial institutions from developing countries may suffer through links with countries with unstable macroeconomic conditions. Entry of entities from financially well developed and stable economies might increase stability. But foreign funding of domestic banks through deposits and deposit like instruments– which are very liquid (eg Estonian /Ukrainian banks in Russia) can be very volatile if the foreign source is an emerging market. Banks may need additional reserves. Even lending to nonbanks and corporations in countries with unstable macroeconomic conditions may pose systemic risks for the host (emerging) economy.

Volatility in capital flows can increase volatility in stock markets. The asset bubble crash in Asia meant that recovery in Asia took longer while the absence of such a crash in Mexico may have led to faster recovery. Since firms were highly leveraged, a fall in asset prices had large effects on net worth. As credit constrained firms tried to increase liquidity by selling assets, asset prices fell further. Credit constraints can interact with business cycle fluctuations to accentuate declines in economic activity (Kiyotaki and Moore, 1995). These experiences suggest that there may be value in imposing restrictions on the granting of margin loans particularly when capital markets are open³³ and equity markets are thin, and on restrictions on lending to the property sector: an area susceptible to bubbles. Thailand had restrictions on lending to the property sector

³³ Opening capital markets has the effect of making stock markets more volatile (Levine, 1998).

which it removed in 1996. There may also be a case for restrictions on asset base diversification/concentration by sector.

Policies for the Corporate Sector

Corporate accounts were the least transparent in the countries which were the worst affected by the capital outflows in East Asia. Transparency in public and private accounts and processes may reduce rents resulting from asymmetric information and therefore rent seeking and speculative attacks. But in order for transparency and information provision to be effective, it needs to be comprehensive or else risk increasing activities will migrate to less transparent sectors. Timely dissemination of information may limit contagion by helping creditors distinguish between good and bad credit and solvent and insolvent governments (this will affect the value of the guarantee enjoyed by the banks). But the information has to be of good quality. For this reason, adopting international accounting standards (rather than standards unique to any one country), and enforcing disclosure of information would be recommended.

Much of banking distress is linked to corporate distress. Lack of good workout practices and clear bankruptcy procedures may make investors more volatile (Caprio and Honohan, 1999). Some say the lack of clear bankruptcy laws and workout mechanisms added to the withdrawal of credit in East Asia and elsewhere since foreign lenders feared they would have little recourse to collect on bad loans. Borrower incentives are also affected by the legal environment. Therefore, a legal system is well equipped to deal with bankruptcy and to enforce contracts may improve a country's creditworthiness relative to others and limit herding behaviour and volatility (for example).

Another option aimed at reducing volatility is to reduce the build-up of short-term external debt might be to limit the tax deductibility of interest payments on such debt (Stiglitz and Bhattacharya, 1997). Finally, the composition of debt may be affected by policy. Good macroeconomic and structural policies will be more likely to attract the better kind of capital flows, but easing administrative restrictions on FDI will also help.

Creditor Countries

Policies in developed countries' financial markets have strong effects on emerging economies. An example is a provision of the 1998 Basle Accords which has the effect of distorting creditors' incentives and increasing emerging market risk: under these Accords for bank supervision, short term bank credit to non-OECD banks carries a 20% risk weighting while

long term credit (over one year) carries a 100% risk weight. Similarly claims on financial institutions carry a 20% risk weight while claims on non-financial institutions carry a 100% risk weight for emerging markets, thus encouraging banks to lend to less regulated entities such as hedge funds. Lender country lapse and subsequent tightening of regulations and supervision of their banks can create or exacerbate vulnerabilities in emerging markets. For example, lax regulation of Japanese banks allowed large amounts of lending to East Asia the riskiness of which was not properly accounted for by banks in the pricing of their loans. Later when the Japanese authorities took actions to strengthen banks' balance sheets, this led to a decline in the availability of credit on favorable terms for East Asian emerging markets. As another example, regulations on the quality of the assets held by institutional investors may enhance dumping of emerging market assets in bad periods.

Expectations of bailouts by the international community (or a subset thereof) can have significant effects on financial flows to emerging economies. Bail-outs were first viewed as a mechanism which would limit the spread of financial crises by bolstering investor confidence though they could increase moral hazard for lenders. More recently, the view has been expressed that large bailouts due to their high costs for the international community may reduce expectations of a similar bailout for another country and therefore increase the chance of a speculative attack on that country. Bail-ins of private creditors (forced rescheduling) will ensure that creditors take some losses for risky loans they have made. But forcing a bail-in in one country may lead to withdrawal of credit from other emerging markets and also, slower growth of such credit in the future. While the first consequence could be large and negative (attempts to bail in creditors to Ukraine has only been partially successful and for Russia, unsuccessful to date), particularly in a situation of global pessimism, the second may be desirable over the longer term.

Negative output effects associated with financial withdrawal can be exacerbated by prolonged bargaining between creditor and debtor countries which precedes the reorganization of claims. Creditors know that not everyone will get paid and this makes resolution of claims more difficult. There are options such as "standstills" for all creditors at times of crisis, contingent credit lines from international lenders, and special bankruptcy laws which, if implemented under severe macroeconomic shocks,³⁴ could limit the impact on output by (a) limiting outflows and (b) allowing for quick resumption of production. However if policies at the national or supranational level were such that some of these measures (such as a super bankruptcy law or

³⁴ These laws would be intended to facilitate resolution of claims in crisis situations. By thus shortening the period during which reorganization/ restructuring takes place, and by including provisions more in presumption of the debtor and the continuation of production, the decline in output may be diminished.

standstills) would be adopted, there would probably be *ex ante* effects on the price and volume of capital flows. In short, their volume may fall and the price may increase. Both actions are desirable over the medium term to the extent that the allocation and pricing of credit will more closely approximate the true risks of lending to emerging markets.

Conclusion: General Lessons Revisited

The policies which might be used by emerging markets to improve risk management with open and liberalized financial markets may be summarized under four broad headings: Debt management and controls on capital flows, financial and corporate sector policies to manage risk, sound macroeconomic policies, and transparency and the provision of information.

Debt Management and Controls on Capital Flows

A key lesson is that countries need to manage the growth of external indebtedness and its maturity, level and currency composition. Large amounts of short term debt should be avoided and bunching of debt repayments should be avoided. Where short term debt is already large, reserves relative to liquid liabilities will need to be strengthened (the critical ratio seems to be 1). A manageable debt stock can swiftly become an unsustainable one. If countries opt for large levels of short term debt, they need to factor in the costs of maintaining high levels of liquid reserves. Fiscal discipline is an important element of sustainable debt management and liquidity management. But when private sector borrowers are unable to hedge risks or manage risks, policies promoting good debt management will be needed. Countries may need to tax external capital in order to smooth out real effects on the capital importing country (including exit taxes) and to encourage flows of capital which are less volatile. (Particularly if the country faces an upward sloping supply of capital, as usually is the case, there is an argument for taxation of foreign capital). Large volatility in capital flows and therefore in output may lead to net welfare being lower on average than would otherwise be the case. Evidence to date indicates that FDI flows are less volatile than other types of flows but countries need to factor in remittances in future years.

Managing Financial Sector Risk.

Full liberalisation of the financial sector leads to a wider set of opportunities for banks. Liberalisation of the financial sector and of capital flows should keep pace with the development of institutional mechanisms designed to ensure efficient allocation of resources and to minimize divergences between private and social costs. One way to effectively limit the rate at which new risks emerge and multiply (so as to be more consistent with the supervisory capacity of the

country) is to limit the growth of the financial sector. It will not only lower the chance of a financial crisis but also enable a faster turn around in case a financial crisis occurs. Very fast financial sector growth ending in highly leveraged firms (when equity and bond financing is underdeveloped) makes firms very vulnerable to changes in interest rates. The decline in firm net worth is larger for heavily leveraged firms when interest rates rise. In emerging markets where risk management capacities are under-developed or risk hedging opportunities are limited, maturity and liquidity requirements for financial institutions are recommended. Country experience has shown that taxing/restricting activities of banks only leads to movement of risky activities to non-banks. Other policies, the precise nature of which would depend on the structure of the economy, (for example, whether it is corporations or non bank financial institutions which are borrowing short-term) may be needed. Bank lending which is based on the use of securities as collateral when stock markets are thin (these assets become more important the less developed is the bankruptcy law) can also aggravate downturns in economic activity and supervisory authorities may need to restrict these activities. Supervisors may also need to consider some restrictions on bank investment in assets such as real estate which are subject to bubbles.

Other Macroeconomic Policies.

An important message is that the exchange rate regime matters only to the extent that policymakers should avoid large real appreciations. Monetary policy should be consistent with fiscal policy *and with the countries growth objectives*. Initial policy responses to tighter markets matter. In periods of capital flow reversal policymakers need to make difficult decisions regarding the relative adjustment through prices versus outputs. In times of crisis the first priority should be to maintain production, and to preserve real capital (organizational, social, informational, human and physical). Policies which are dictated by these priorities may be different from country to country and there is no good recipe for success. Sometimes there is little choice. East Asia attempted to maintain the exchange rate, but ended up with large devaluations and large output losses. The question is, would an initial devaluation have led to less severe output declines and when do interest rate hikes work? Estonia has adjusted to declining capital inflows by maintaining flexibility in internal markets (prices and output) and has also experienced both deflation and a slowdown in output growth. But it has avoided a currency crisis by allowing European investors to “solve” its banking crisis. In 1998, the number of banks in Estonia dropped from 11 to five and most banks were bought by European partners. One might argue that Estonia’s opportunities are not available for all countries, that the “guarantee” on policy through Estonia’s imminent accession to the EU plays an important role. But countries need to realise that if they wish to maintain their exchange rate pegs then they must adjust through other means.

Information and Transparency.

Emerging markets are less likely to have good quality information and less transparent economies than those in developed countries. Access on a timely basis to good quality information will help investors to distinguish good risks from bad and could limit herding behaviour. It may also reduce inflows ex ante to economies whose vulnerabilities are more exposed, but this is also desirable in view of the fact that reversals in these cases are more likely.

But it is still important to have rich friends....

No matter how sophisticated a country's risk management systems, and how good its policies are on average, relative rates of returns on assets and expectations change continuously across countries. Developed countries themselves may exacerbate these changes through their financial as well as macroeconomic policies. And subjective factors are important in effecting real changes. In a world where financial markets are becoming increasingly global, and where transactions costs have fallen due to technological improvements, capital will continuously move in and out of countries. Countries may experience real output costs as a result. But recent experiences have shown that having rich neighbors who are willing to bail you out (like the Mexicans did) reduces these costs. With financial help (a great deal came from the United States government) Mexico retired its tesobonos at full value and regained market access within months. Mexico received much more cash than did Asia at the time of the liquidity crunch: though Indonesia, Korea and Thailand together received about US\$118 billion, about the same amount in terms of GDP as Mexico at US\$ 40 billion, a lot of the money was reserved as contingent second line of defense funds from individual governments with little chance of early disbursement. By the end of the third quarter of 1998 only US\$ 35 billion was disbursed.

References

- Aiyer, Sri-Ram. 1996. *Anatomy of Mexico's Banking System During the Peso Crisis*. Latin America and the Caribbean Technical Department, Regional Studies Program. Report No. 45.
- Asli Demirgüç-Kunt, and Enrica Detragiache. 1997. *The determinants of Banking Crises. Evidence from Industrial and Developing Countries*. Policy Research Working paper #1828. The World Bank Development Research Group and International Monetary Fund Research Department, September 1997.
- Atiyas, Izak (Bilkent University and Center for Economics and Econometrics), Serif Sayin. *A Political Economy Perspective on Turkish Budget Deficits*.
- Baliño, Tomás J.T., Adam Bennett, and Eduardo Borensztein and comprising Andrew Berg, Zhaohui Chen, Alain Ize, David O. Robinson, Abebe Aemro Selassie, Lorena Zamalloa. *Monetary Policy in Dollarized Economies. Occasional Paper*. International Monetary Fund. 1999.
- Barth, James R., Gerard Caprio, Jr. and Ross Levine. *Financial Regulation and Performance. Cross-Country Evidence*. Policy Research Working Paper No. 2037. World Bank, Development Research Group. January 1999.
- Bartolini, Leonardo, and Allan Drazen. *Capital-Account Liberalisation as a Signal*. AER, vol. 87 (March 1997) pp 138-54.
- Berg, Andrew, and Catherine Pattillo. 1999. *Are Currency Crises Predictable? A Test*. International Monetary Fund. Working Paper No. WP/98/154.
- Berger, Allen N., Sally M. Davies, and Mark J. Flannery. 1998-32. *Comparing Market and Supervisory Assessments of Bank Performance; Who Knows What When? Finance and Economics Discussion Series*. Divisions of Research & Statistics and Monetary Affairs Federal Reserve Board, Washington, D.C.
- Bernard Laurens, Jamine Cardoso. December 1998. *Managing Capital Flows: Lessons from the Experience of Chile*. International Monetary Fund Working Paper. WP/98/168.
- Branco, Marta de Castello, Alfred Kammer, and L. Effie Psalida¹. 1996. *Financial Sector Reform and Banking Crises in the Baltic Countries*. IMF Working Paper WP/96/134. IMF European II Department.
- Brock, Philip Lawton. *If Texas were Chile: a primer on banking reform*. San Francisco, Calif. ICS press, c1992.
- Burnside, Craig, Martin Eichenbaum, and Sergio Rebelo. *Hedging and Financial Fragility in Fixed Exchange Rate Regimes*. National Bureau of Economic Research. Working Paper 7143, May 1999.

- Burnside, Craig. 1998. *Prospective Deficits and the Asian Currency Crisis*. The World Bank, Northwestern University, NBER and Federal Reserve of Chicago.
- Calvo, Guillermo A. 1996. *Capital Flows and Macroeconomic Management: Tequila Lessons*. Center for International Economics, University of Maryland, Room 4118, Tydings Hall, College Park, MD 20742, U.S.A. *International Journal Finance Economics*, Vol. 1, 207-223 (1996).
- Calvo, Guillermo A., and Allan Drazen. February 1997. *Uncertain Duration of Reform: Dynamic Implications*. National Bureau of Economic Research. Working Paper Series (U.S.); No. 5925:1[22].
- Calvo, Guillermo A., and Enrique G. Mendoza. June 1999. *Rational Contagion and The Globalization of Securities Markets*. National Bureau of Economic Research. Working Paper Series (U.S.); No. 7153:1-[40].
- Calvo, Guillermo A., Leonardo Liederman, and Carmen M. Reinhart. *The Capital Inflows Problem Concepts and Issues*. An International Center for Economic Growth Publication. San Francisco, California.
- Calvo, Guillermo A., Morris Goldstein, Eduard Hochreiter (Editors). *Private Capital Flows to Emerging Markets after the Mexican Crisis*. Institute For International Economics, Austrian National Bank.
- Calvo, Guillermo, Leo Leiderman and Carmen Reinhart, 1993b, "The Capital Inflows Problem: concepts and Issues. Research Department, International Monetary Fund, June.
- Caprio, Jerry and Patrick Honohan. *Beyond Capital Ideals: Restoring Banking Stability*. The World Bank, March 1999.
- Caprio, Jerry, Patrick Honohan. 1999. *Beyond Capital Ideals: Restoring Banking Stability*. The World Bank.
- Cárdenas, Mauricio, Felipe Barrera. *On the effectiveness of capital controls: The experience of Colombia during the 1990s*. *Journal of Development Economics*, Vol. 54 (1997) 27-57.
- Cassard, Marcel, David Folkerts-Landau. 1997. *Risk Management of Sovereign Assets and Liabilities*. IMF Working Paper. WP/97/166.
- Castello-Branco, Marta. *Capital Inflows in the Baltic Countries*. IMF European II Department. For a presentation by Mr. Jorge Marquez-Ruarte at the Workshop on "Financial Inflows to Transition economies", at IIASA, Laxenburg, Austria.
- Celasun, Oya, University of Maryland; Cevdet Denizer, International Finance Corporation/The World Bank; and Dong He, International Monetary Fund, 1999. *Capital Flows, Macroeconomic Management, and the Financial System: The Turkish Case, 1989-1997*.

- Chuhan, Punam, Stijn Claessens, and Nlandu Mamingi. 1998. *Equity and Bond Flows to Latin America and Asia: the Role of Global and Country Factors*. *Journal of Development Economics (Netherlands)*; 55-439-63, April 1998.
- Claessens, Stijn and David Naude. 1993. *Recent Estimates of Capital Flight*. International Economics Department, The World Bank. Working paper No. 1186.
- Claessens, Stijns, Michael P. Dooley, and Andrew Warner. 1995. *Portfolio Capital Flows: Hot or Cold?* *World Bank Economic Review (International)*; 9:153-74, January 1995.
- Cuddington, John T. December 1986. *Capital Flight: Estimates, Issues, and Explanations*. Princeton Studies in International Finance No. 58,.
- Daveri, Francesco, Università' di Brescia, Italy. 1995. *Costs of Entry and Exit from Financial Markets and Capital Flows to Developing Countries*. *World Development* Vol. 23, No. 8, pp. 1375-1385.
- Demirguc-Kunt, Asli, and Enrica Detragiache. *The Determinants of Banking Crises in Developing and Developed Countries*. IMF Staff Papers, Vol. 45, No. 1 (March 1998).
- Denizer, Cevdet. *The Effects of Financial Liberalisation and New Bank Entry on Market Structure and Competition in Turkey*. 1997. Policy Research Working Paper No. 1839. The World Bank.
- Dooley, Michael P. September 1988. *A Survey of Literature on Controls over International Capital Transactions*. IMF Staff Papers, Vol. 43, No. 4 (December 1996).
- Dooley, Michael P., Menzie Chinn. 1995. *Financial Repression and Capital Mobility: Why Capital Flows and Covered Interest Rate Differentials Fail to Measure Capital Market Integration*. NBER Working Paper 5347. Department of Economics. University of California, Santa Cruz, Santa Cruz, CA 95064.
- Dooley, Michael P., University of California, Santa Cruz. *Response to Volatile Capital Flows: Controls, Asset Liability Management, and Architecture*. A Paper for Presentation at the World Bank/IMF/WTO Conference on Capital Flows, Financial Crises, and Policies. April 1999.
- Dooley, Michel P. 1996. *Capital Controls and Emerging Markets*. Department of Economics, Social Sciences I, University of California, Santa Cruz, Santa Cruz, CA 95064, USA. *Int. J. Finance Economics*, Vol. 1, 197-205, (1996).
- Easterly, W., Islam, R., and Stiglitz, J. E. August 1999. *"Shaken and Stirred: Volatility and Macroeconomic- Paradigms for Rich and Poor Countries*. Paper Presented at IEA Conference. Buenos Aires, August 1999.
- Eichengreen, Barry, James Tobin and Charles Wyplosz. *Two Cases For Sand In The Wheels Of International Finance*. *The Economic Journal*, 105, 162-172. Royal Economic Society 1995. Published

- Eichengreen, Barry. 1999. *Toward A New International Financial Architecture: A Practical Post-Asia Agenda*. Washington, D.C.: Institute for International Economics, 1999, xv, 189 p. :ill. ; 23 cm.
- Eyzaguirre, Nicolas, Fernando Lefort. *Capital Markets in Chile 1985-1997. A case of successful international financial integration*.
- Flood, Robert P., Peter M. Garber, and Charles Kramer. October 1995. *Collapsing Exchange Rate Regimes: Another Linear Example*. National Bureau of Economic Research. Working Paper Series (U.S.); No. 5318:1-[22]., October 1995; and *Journal of International Economics* (Netherlands); 41:223-34, November 1996.
- Frankel, Jeffrey A., University of California at Berkeley. October 1993. *Sterilization of Money Inflows: difficult (Calvo) or Easy (Reisen)?* Center for International and Development Economics Research. Working Paper No. C93-024.
- Garber, Peter M. July 1996. *Managing Risks to Financial Markets from Volatile Capital Flows: The Role of Prudential Regulation*. *International Journal of Finance and Economics* (U.K.); 1:83-95.
- Goldfajn, Ilan and Donald J. Mathieson and Rodrigo O. Valdés¹. 1997. *Capital Flows and the Twin Crises: The Role of Liquidity¹*. IMF Working Paper, WP/97/87.
- Goldfajn, Ilan and Rodrigo O. Valdes. *The Aftermath of Appreciations*. 1999 by the President and fellows of Harvard college and the Massachusetts Institute of Technology. *The Quarterly Journal of economics*, February 1999.
- Grilli, Vittorio, and Gian Maria Milesi-Ferretti. *Economic Effects and Structural Determinants of Capital Controls*. IMF Staff Papers Vol. 42, No. 3 (September 1995).
- Gros, Daniel. *The Effectiveness of Capital Controls. Implications for Monetary Autonomy in the Presence of Incomplete Market Separation*.
- Hernández, Leonardo, and Schmidt-Hebbell, Klaus, Central Bank of Chile. *Capital Controls in Chile: Effective? Efficient? Endurable?* A Paper for Presentation at the World Bank/IMF/WTO Conference on Capital Flows, Financial Crises, and Policies. April 1999.
- Higgins, Michael J. 1998. *The Ukrainian Banking System*. Central Capital Markets Department, International Finance Corporation.
- IBRD, Report No. P7226UA. 1998. *Proposed Financial Sector Adjustment Loan in the Amount of US\$ 300 million to Ukraine*.
- IMF 1999. *Exchange Arrangements and Exchange Restrictions Annual Report 1998*.
- International Monetary Fund. *Turkey – Recent Economic Developments*. Country Report No. 95/43. May 1995

- International Monetary Fund. Turkey – Recent Economic Developments. Country Report No. 96/122. November 1996.*
- John Williamson. Crawling Bands or Monitoring Bands: How to Manage Exchange Rates in a World of Capital Mobility. Institute for International Economics. IIE Number 99-3.*
- Johnston, R. Barry and Natalia T. Tamirisa. 1998. Why Do Countries Use Capital Controls? International Monetary Fund, Monetary and Exchange Affairs Department. Working Paper No. WP/98/181.*
- Joseph E. Stiglitz and Amar Bhattacharya. 1999. Underpinnings for a Stable and Equitable Global Financial System From Old Debates to a New Paradigm. Paper prepared for the Eleventh Annual Bank Conference on Development Economics, April 28-30, 1999*
- Kaminsky, Graciela, Saul Lizondo, and Carmen M. Reinhart. Leading Indicators of Currency Crises. IMF Staff Papers, Vol. 45, No. 1 (March 1998).*
- Kaminsky, Graciela L., George Washington University, Sergio L. Schmukler. March 1999. What Triggers Market Jitters? A Chronicle of the Asian Crisis.*
- Kaminsky, Graciela L., George Washington University; Carmen M. Reinhart, University of Maryland. On Crises, Contagion, and Confusion. Draft: November 24, 1998.*
- Kaminsky, Graciela L. The Twin Crises: the Causes of Banking and Balance of Payments Problems. International Monetary Fund Seminar Series (International); No. 1996-12:1-26, March 1996; United States. Board of Governors of The Federal Reserve System. International Finance Division. International Finance Discussion Papers (U.S.); No. 544:1-28, March 1996; American Economic Review (U.S.); 89:473-500, June 1999.*
- Khan, Mohsin S., and Donald J. Mathieson. The Implications of International Capital Flows for Macroeconomic and Financial Policies. International Monetary Fund. 1996 by John Wiley & Sons, Ltd.*
- Krugman, Paul R. Currencies and Crises. Cambridge, Mass.: MIT Press, 1992.*
- Krugman, Paul R., and Miller, M.H. (Marcus H.), Corporate Authors: Centre for Economic Policy, and National Bureau of Economic Research. 1991. Exchange Rate Targets and Currency Banks / Edited by Paul Krugman and Marcus Miller. Cambridge [England]; New York: Cambridge University Press. 1991.*
- Le Fort, Guillermo V., and Carlos Budnevich L. Capital Account Regulation and Macroeconomic Policy: Two Latin American Experiences. Working Paper No. 162. May 1996.*
- Leiderman, Leonardo, and Alfredo Thorne. The Mexican Crisis of December 1994. What Went Wrong? Draft in Progress. Washington, D.C, May 2, 1995.*

- Levine, Ross, *World Bank*, Sara Zervos, *University of Rochester*. "Policy, Stock Market Development and Long-Run Growth" Part II. Stock Markets, corporate Finance, and Economic Growth.
- Loayza, Norman, Humberto Lopez and Angel Ubide. *Sectorial Macroeconomic Interdependencies: Evidence for Latin America, East Asia and Europe*. January 1999.
- Mann, Catherine L. *Market Mechanisms to Reduce the Need for IMF Bailouts*. International Economics Policy Briefs. IIE Number 99-4.
- Miller, Marcus, *University of Warwick*, and Stiglitz, Joseph E., *The World Bank*. *Bankruptcy against Macroeconomic Shocks: The case for a 'Super Chapter 11'*. A Paper for Presentation at the World Bank/IMF/WTO Conference on Capital Flows, Financial Crises, and Policies. April 1999.
- Montiel, Peter (Williams College, Williams Town, MA), and Carmen M. Reinhart (University of Maryland). Do Capital controls and Macroeconomic Policies Influence the Volume and Composition of Capital Flows? Evidence from the 1990. *Draft abstract, July 1997*.
- Mussa, Michael, and Richards, Anthony. *Capital Flows in the 1990s before and after the Asian Crisis. International Monetary Fund. A Paper for Presentation at the World Bank/IMF/WTO Conference on Capital Flows, Financial Crises, and Policies*. April 1999.
- Obstfeld, Maurice, *University of California at Berkeley*, and Kenneth Rogoff, *Princeton University*. *Exchange Rate Dynamics Redux*. February 1994. IMF Seminar Series (International); No. 1994-6: 1-[36], February 1994; National Bureau of Economic Research. Working Paper Series (U.S.); No. 4693: 1-32 April 1994; Centre for Economic Policy Research. Discussion Paper Series (U.K.); No. 1131: 1-32 February 1995; University of California, Berkeley. Center for International and Development Economics research. Cider Working Paper (U.S.); C95-048 January 1995; Journal of Political Economy (U.S.); 103:624-60 June 1995.
- Obstfeld, Maurice. May 1984. *Balance of Payments Crises and Devaluation*. Journal of Money, Credit and Banking (U.S.); 16:208-17.
- Obstfeld, Maurice. October 1995. *Models of Currency Crises with Self-Fulfilling Features*. National Bureau of Economic Research. Working Paper series (U.S.); No. 5285: 1-19, October 1995; Centre for Economic Policy Research. Discussion Paper Series (U.K.); No. 1315:1-19, January 1996; European economic review (Netherlands); 40, No. 3-5: 1037-47, April 1996.
- Powel, Andrew, *Central Bank of Argentina*. April 1999. *On Liquidity Requirements, Capital Controls and Risk Management: Some Theoretical Considerations and Practice from the Argentine Banking Sector*. A Paper for Presentation at the World Bank/IMF/WTO Conference on Capital Flows, Financial Crises, and Policies.
- PREMnotes Economic Policy Number 17. February 1999. *Does debt management matter? Yes*.

- Radelet, Steven and Jeffrey Sachs, *Harvard Institute for International Development*. 1998. *The East Asian Financial Crisis: Diagnosis, Remedies, Prospects*.
- Radelet, Steven and Jeffrey Sachs. *The Onset of the East Asian Financial Crisis*. *Harvard Institute for International Development*. March 30, 1998.
- Reinhart, Carmen, *University of Maryland*, and Kaminsky, Graciela L., *George Washington University*. *On crises, Contagion, and Confusion*. A Paper for Presentation at the World Bank/IMF/WTO Conference on Capital Flows, Financial Crises, and Policies. April 1999.
- Rodrik, Dani, *Harvard University and NBER*, and Velasco, Andrés, *New York University and NBER*. *Short-Term Capital Flows*. Annual Bank Conference on Development Economics. April 28-30, 1999.
- Sachs, Jeffrey D., Aaron Tornell, (*Harvard University*); Andrés Velasco (*New York University*). *Financial Crisis in Emerging Markets: The Lessons from 1995*.
- Sachs, Jeffrey, Aaron Tornell and Andres Velasco. *Financial Crises in Emerging Markets: The Lessons from 1995*. NBER Working Paper Series No. 5576.
- Schadler, Susan, Maria Carkovic, Adam Bennett, and Robert Kahn. 1993. *Recent Experiences with Surges in Capital Inflows*. International Monetary Fund WP, No. 108.
- Sing, Harinder, and Hwang W. Jun. *Some New Evidence on Determinants of Foreign Direct Investment in Developing Countries*. Policy Research Working Paper. WPS 1531. November 1995.
- Stiglitz, Joseph E., and Bhattacharya, Amar. *Underpinnings for a Stable and Equitable Global Financial System From Old Debates to a New Paradigm*. Paper prepared for the Eleventh Annual Bank Conference on Development Economics, April 28-30, 1999.
- Stiglitz, Joseph E. 1999. *The Global Financial Crisis: Perspectives and Policies*.
- Stiglitz, Joseph E. *The Role of The State in Financial Markets*. Stanford University, May 1993.
- Stiglitz, Joseph E., *World Bank*. *Principles of Financial Regulations: A Dynamic, Portfolio Approach*. Speech.
- Talley, Samuel, Marcelo M. Giugale, Rossana Polastri. *Capital Inflow Reversals, Banking Stability, and Prudential Regulation in Central and Eastern Europe*. Policy Research Working Paper 2023. The WB ECA Region.
- Talvi, Ernesto, CERES (*Uruguay*); Carlos A. Végh *UCLA and NBER*. November 1998. *Tax Base Variability and Procyclical Fiscal Policy*. First draft: November 1996. Current draft.
- Tavli, Ernesto. June 1999. *Tax Base Variability and Procyclical Fiscal Policy*. International Monetary Fund Seminar Series (International); No. 1999-29: [1]-[35], June 1999.

- Tobin, James. A Currency transactions tax. Why and How. Cowles Foundation for Research in Economics, Yale University.*
- Tornell, Aaron. 1998. Common Fundamentals in the Tequila and Asian Crises. Harvard University and NBER.*
- Tornell, Aaron. 1998. Lending Booms and Asset Price Inflation. Harvard University and NBER.*
- Velasco, Andrés. July 1999. Liberalisation, Crisis, Intervention: The Chilean Financial System, 1975-1985. IMF Central Banking Department. Working Paper No. WP/88/66.*
- Williamson, John. Implications of the East Asian Crisis for Debt Management. South Asia Region, World Bank.*
- Williamson, John. World Bank. Crawling Bands or Monitoring Bands: How to Manage Exchange Rates in a World of Capital Mobility. International Finance 1:1, 1998: pp. 59-79.*
- World Bank. Argentina Financial Sector Review. September 28, 1998. Report No. 17864-AR.*
- World Bank. February 1999. Reducing Vulnerability to Speculative Attacks. World Bank, PREMnotes Economic Policy. February 1999 Number 16.*
- World Bank. Trade and the East Asian Crisis. 1998. PREMnotes Economic Policy, April 1998 Number 3. From the Development Economics Vice Presidency and Poverty Reduction and Economic Management Network.*

Policy Research Working Paper Series

	Title	Author	Date	Contact for paper
WPS2277	Determinants of Bulgarian Brady Bond Prices: An Empirical Assessment	Nina Budina Tzvetan Mantchev	January 2000	N. Budina 82045
WPS2278	Liquidity Constraints and Investment in Transition Economies: The Case of Bulgaria	Nina Budina Harry Garretsen	January 2000	N. Budina 82045
WPS2279	Broad Roads in a Thin Country: Infrastructure Concessions in Chile	Andrés Gómez-Lobo Sergio Hinojosa	January 2000	G. Chenet-Smith 36370
WPS2280	Willingness to Pay for Air Quality Improvements in Sofia, Bulgaria	Hua Wang Dale Whittington	January 2000	R. Yazigi 37176
WPS2281	External Sustainability: A Stock Equilibrium Perspective	César Calderón Norman Loayza	January 2000	H. Vargas 38546
WPS2282	Managing Fiscal Risk in Bulgaria	Hana Polackova Brixí Sergei Shatalov Leila Zlaoui	January 2000	L. Zlaoui 33100
WPS2283	New Tools and New Tests in Comparative Political Economy: The Database of Political Institutions	Thorsten Beck George Clarke Alberto Groff Philip Keefer Patrick Walsh	February 2000	P. Sintim-Aboagye 38526
WPS2284	The Use of Asset Management Companies in the Resolution of Banking Crises: Cross-Country Experience	Daniela Klingebiel	February 2000	R. Vo 33722
WPS2285	Industrial Environmental Performance in China: The Impacts of Inspections	Susmita Dasgupta Benoît Laplante Nlandu Mamingi Hua Wang	February 2000	Y. D'Souza 31449
WPS2286	Transparency, Liberalization, and Banking Crises	Gil Mehrez Daniel Kaufmann	February 2000	D. Bouvet 35818
WPS2287	The Vicious Circles of Control: Regional Governments and Insiders in Privatized Russian Enterprises	Raj M. Desai Itzhak Goldberg	February 2000	S. Cox 36633
WPS2288	Ten Years of Transformation: Macroeconomic Lessons	Charles Wyplosz	February 2000	M. Jandu 33103

Policy Research Working Paper Series

	Title	Author	Date	Contact for paper
WPS2289	Exchange Rate Overvaluation and and Trade Protection: Lessons from Experience	Howard J. Shatz David G. Tarr	February 2000	L. Tabada 36896
WPS2290	Decentralization and Corruption: Evidence across Countries	Raymond Fisman Roberta Gatti	February 2000	E. Khine 37471
WPS2291	Incentives for Pollution Control: Regulation <i>and</i> Public Disclosure	Jérôme Foulon Paul Lanoie Benoît Laplante	February 2000	Y. D'Souza 31449
WPS2292	Dividing the Spoils: Pensions, Privatization, and Reform in Russia's Transition	Ethan B. Kapstein Branko Milanovic	March 2000	P. Sader 33902

3/7